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BRYOLOGICAL NOTES; BY C. F. AUSTIN.—ENCALYPTA SELWYNI *n. sp.*—Inflorescentia capsula peristomioque *E. procera*, differt tamen statura humiliore, calyptra longissime infra capsulam producta, basi profunde inciso-laciniata limbo fusco ornata, foliis margine magis minusve revolutis, superioribus late lingulatis costa percurrente vel excurrente et pilo longo hyalino subdeplanato instructis.

Vancouver's Island, May, 1875. *Macoun.*

Calyptra narrow, nearly or quite as long as in *E. contorta* (WULF.) *Hopp.* (*E. streptocarpa*, HEDW.) yellowish with a brownish or greenish tinge, with a broad thin fuscous border, and more or less incised at the base, the fringe persistent and becoming white with age, persistent for more than one year, the whole surface minutely and rather remotely papillose. Pedicel remotely and minutely papillose, dark red, solid, the apex twisted to the right (rarely to the left). Capsule solid, strongly sulcate and distinctly twisted to the right, cylindrical. Peristome perfectly epapillose, elongated; the outer dark red, with the teeth filliform and distantly nodulose; the inner yellow, with the cilia nearly as long as the teeth and arising from a broad membrane; annulus not seen. Stems short and subgregarious. Leaves somewhat carinate, slightly undulate and more or less revolute on the margin in the middle; the lower ones oblong or oblong-linear obtuse with the costa usually percurrent; the upper ones broadly lingulate acute and with the costa extending into the long hyaline flattish *pilum*. Costa densely papillose on the back and rufous below; nearly naked, yellowish and somewhat pellucid towards the apex. Inner perichætial leaves very small and acute, piliferous. Inflorescence monœcious and bisexual in the same plant. Pistils sometimes naked and axillary.

SYRRHOPODON ? CRISPUS, *n. sp.*—Humilis, cæspites compactos inferne fuscescentes superne pallido-fuscescentes vel flavido-virides formans; foliis siccitate valde crispatis (*Orthotrichum crispulum* æmulantibus) in humore strictis suberectis a basi tenuissima sensim angustata anguste-panduræformi-ligulatis planis papillosis, apiçe obtuso ac sæpe retuso, solum parte inferiore valde hyalina marginatis, parte superiore densissime granuloso-areolatis papilloso-crenulatis haud lamellatis, costa lutescente percurrente: sterilis. (An *Calymperes* species?)

On rotten wood, Florida, Feb. 1877, *J. Donnell Smith.*

A very distinct species with much the appearance of a sterile compact growth of *Dicranum montanum*, which is found on rotten wood in open places in the north.

GRIMMIA COLORADENSE, *n. sp.*—Monoica (autoica) pulvinato-cæspitulosa; caule 2–3 lineas longo fastigiato-ramoso, foliis caulinis erectiusculis lanceolatis vel sublingulatis carinatis muticis vel superioribus hyalino-apiculatis margine magis minusve incrassatis nonnunquam supra medium leniter recurvis, reti minutissimo denso leniter pellucido, basilari paulo majori, costa tenui plerumque longeante apicem evanida, perichætalibus erectis latioribus basi laxe textis pellucidis margine sæpe subundulatis apice longiuscule hyalino-mucronatis (mucrone serrato) costa sub apice evanida: capsula in pedicello recto perbrevi immersa globosa macrostoma, peristomii dentibus pallido-rubris brevibus latis apice subcribrosis siccitate patenti-recurvis humiditate incurvis; calyptra operculoque haud visis.

Colorado, 1876, *Brandegee* (*Rau*).

Among the smallest of the genus; readily distinguished by the carinate mutic or very shortly pointed leaves somewhat thickened and often slightly recurved on the margin above the middle, with the costa ceasing far below the apex, and by the short straight pedicel.

MACROMITRIUM RHABDOCARPUM, MITT.—Monoicum; foliis siccitate valde crispatis in humido subflexuosis patentibus lineali-lanceolatis obtusiusculis subapiculatis subcarinatis minutissime crenulatis margine planis, areolatione minuto superne subrotundo granuloso basilari longiori sed haud latiori, costa percurrente, capsula ovata ovalive distincte 8-costata abrupte in pedicello longo defluente, ore parvo, operculo rostrato, peristomii dentibus brevibus pallidis fragilis, calyptra vix ad capsulæ basim producta valde plicato-costata basi pluries lobata parce pilosa straminea apice leviter fusca.

In the crotch of a recently cut Live Oak. St. Augustine, Florida, Feb. 1877, *J. Donnell Smith*.

Mode of growth much as in *Drummondia clavellata*. Capsule composed of minute cells, *not* conspicuously colored at the mouth.

BRYUM BIDDLECOMIÆ, *n. sp.*—A *Br. Warneo*, differt foliis distinctissime marginatis margine late revolutis apice obsoletissime serratis, capsula majore (pendula), operculo mutico vel minutissime papillato.

Colorado, *Miss H. J. Biddlecome*.

Stems rather short, innovately branched, the branches flagelliferous (as in *Br. Warneum*, BLAND.). Leaves broadly ovate or ovate-lanceolate, entire, cuspidate by the stout excurrent costa, broadly revolute on the margin, with a narrow subsolid border. Capsule rather large, pendulous, with a rather long neck which is much constricted when dry, constricted under the mouth, pale, becoming light fuscous. Operculum rather large, convex, mutic or very minutely papillate, pale, with a narrow rim composed of 2 or 3 rows of slightly different (pale) cells. Annulus rather narrow for the genus, revolute. Peristome with the ciliola imperfect or wanting. Spores twice as large as in *B. bimum*.

BRYUM MACOUNI, AUST. Ms. (1865).—Dioicum robustum, caespites compactos superne pulchre miniatos vel flavescentes formans; caule magis minusve elongato subsimplici julaceo strictiusculo, foliis erectis appressis arcte imbricatis subrotundis vel ovatis valde concavis obtusissimis subcucullatis, integerrimis haud vel indistincte marginatis, margine plano, reti pro genere parvo superne rhombeo inæquali inferne subquadrat, costa valida sub apice finiente; capsula horizontali vel subpendula a collo longiusculo anguste elliptica saturate vel atro-rubra, solidissima, operculo conico acutiusculo fragili, annulo lato incrassato solido, peristomio externo vinoso-rubro, interno libero membrana latissima, brevi ciliolis perfectis.—Var. *subcatenulatum*.—Foliis inferioribus subdistantibus apertis, superioribus raptim in gemmulam magnam congestis, caule ex apice interrupte continuo (catenulato).

Near Belleville, Canada West (the var.); also Vancouver's Island, *Macoun* (sterile). The fertile plant is from Oregon, recently sent by *Mrs. Roy*, of Owen Sound, Canada.

Resembles *Br. miniatum*, LESQX.; but that is smaller, with narrower often acute leaves more or less distinctly margined, and often rather broadly revolute on the margin, with the costa often percurrent, the areolation different, etc.; and, furthermore it appears to be too near *Br. Muhlenbeckii*, BR. EU. (*Br. Muhlenbeckii* has been found in the mountain ravines of Pennsylvania (*Wolle & Rau*), but without fruit.)

BRYUM RAUEI, *n. sp.*—*Br. Muhlenbeckii* affinis, differt tamen foliis nitidissimis uniformiter angustissime marginatis margine nunquam recurvis reti longiore superiori vix rhombeo, etc.

On wet rocks, Alpine regions of the White Mountains (abundant); also at Cauterskill Falls, Catskill Mountains.

Forming extensive dense shining dark green or often reddish cushions, on wet, sloping rocks. Leaves oblong, obtuse or acutish, entire, narrowly but distinctly margined, plane on the margin; cells at the base more or less quadrate, above oval or oblong; costa ceasing below or at the apex. Fruit not seen. Much like the var. of *Br. Macouni*, mentioned above, but that has the leaves all obtuse, and very indistinctly if at all margined. There is another sterile (always?) *Bryum* growing in great profusion on the White Mountains, associated with the preceding and with *Leptotrichum heteromallum*. It resembles *Mielichloferia nitida* in most respects, but is larger with the stems often flagelliferous. It also occurs on the mountains of New York and New Jersey, and I have had it in my herbarium for the past ten years under the provisional name of *Bryum compactum*.

DICHELYMA CYLINDRICARPUM, *n. sp.*—Capsula cylindrica flavescente in pedicello fere unciam longo ex perichætium longo exserta subirregulari siccitate subcostata, operculo acuto, alte conico, annulo—— ?peristomio externo longissimo dentibus solidissimis opacis papillosis vix nodulosis, interno paulo longiore toto cancellato papilloso, columella angusta longe emergente; foliis caulinis lanceolato-subulatis subcirrhato-falcatis integerrimis vel apice extremo serrulatis, costa terrete longe excurrente, perichætialibus pedicello dimidio brevioribus subtorquatis obtusis (semper?)

Oregon; communicated by *Mrs. Jessie Roy*.

Nearest to *D. uncinatum*, MITT.; but readily distinguished by the capsule being twice as long and on a much longer pedicel, peristome much longer and papillose, stem-leaves with the costa more distinctly excurrent into a narrower more acute terete point, etc.

In *D. uncinatum*, collected in British America by Macoun, the peristomal teeth are subpellucid, distinctly nodulose, epapillose, etc.; columella broad; stem-leaves with a flattish point; perichætial leaves often longer than the pedicel, twisted (Mitten to the contrary notwithstanding), operculum not rostrate in the single example seen by me.

FABRONIA DONNELLII, *n. sp.*—Foliis oblongo-lanceolatis strictiusculis nonnunquam submarginatis obsolete serratis subecostatis, reti angusto basilari majore subquadrato inflato, capsula ovali subincurva, peristomii dentibus 16 majusculis siccitate subhorizontaliter incurvis humiditate erectis sublanceolatis integris apice leniter recurvis articulationibus dorso valde prominentibus: monoica; flore masc. parvo, juxta fœmineum posito

On the branches of a recently cut Live Oak, Florida, Feb. 1877, *J. D. S.*

Mode of growth and form of capsule much as in *Hypnum microcarpum*, but smaller in all its parts, with narrower and more narrowly reticulated leaves, the inflated cells at the basal angles more numerous, peristome different, etc. Remarkable for the prominent articulations of the peristomal teeth.

BRACHYTHECIUM (*Cacrnularia*) SPLENDENS, *n. sp.*—Caule pluries vage ramoso, rameis brevibus subjulaceis confertis subflexuosis, foliis splendentibus plurifariis arcte imbricatis erectis siccitate haud mutatis læte viridibus a basi latissime cordatis late triangulari-lanceolatis sensim acuminatis leviter bi-quadriplicatis vix concavis, margine plerumque plana minute serrata, angulis excavatis, costa tenui longe sub apice finienti, areolatione minuto angustissimo infra medium sensim breviori et latiori ad basim infimam subabrupte inflato (præcipue ad angulos).

On Palmetto trunks, St. Augustine, Florida, Feb. 1877, *J. Donnell Smith*.

Resembles *Br. latum* BRID.; but is readily distinguished by the more lustrous less strongly sulcate leaves with a cordate auriculate base. Inflorescence and fruit not seen.

HYPNUM (*Myurium?*) COLORADENSE, *n. sp.*—Differt a *M.? Herjedalico*, SCHIMP. *Synop.*, caule compresso foliis subplicatis basi subrotundis margine inferne vix recurvis. (An *Rhynchostegii* species?)

Colorado, *Miss H. J. Biddlecome*.

Robust; stems erect or at length prostrate, compressed, sparingly branched. Leaves erect, appressed, imbricated, not changed in drying, oblong-ovate, concave, subplicate, the apex abruptly piliferous, the *pilum* often recurved, the margins entire or subserrate scarcely recurved at the base; the base somewhat narrowed and rounded, the angles excavated; cells narrow and nearly straight and uniform except at the very base where they are shorter and slightly inflated (oval or roundish), but not more pellucid.—The reticulation of the subplicate leaf suggests a *Camptothecium*, the pilum at the apex is much as in *Eurrhynchium piliferum*, while the general habit of the plant is *Rhynchostegioid*.

THE APRIL FLORA OF CEDAR KEYS, FLA.—Entering a new country the change brings to view much that is novel, interesting and instructive to an observing mind. Leaving with the setting sun the rolling upland country and passing through the lowlands of pine and hummock, we reached at night the west coast at Cedar Keys. In the morning a varied scenery presented itself. From the center of a V-group of keys, twenty or thirty in number, extended to my right the wide expanse of the Great Gulf of Mexico, and to my left the low line of pines defining the distant shores of the mainland until lost in the misty horizon. Of these keys or islands some are small, low and frequently inundated by the tidal wave. Such yield invariably *Avicennia tomentosa*, Jacq., known as the Black Mangrove, *Borrichia frutescens*, DC., *Salicornia fruticosa*, L., var. *ambigua*, Gr., and little else save beds of a small bivalve known here as the "coon oyster." The more elevated islands, traversed by sand ridges, knolls and shell mounds, contain a flora usually rich in species; and notably prominent appear dense shrubbery and dwarfed trees of which *Quercus aquatica*, Catesb., and *Persea Catesbyana*, are extremely abundant.

The backwardness of the vegetation, the damp atmosphere and the rough sea at this season occasioned by the continued strong sea breezes, and the uninviting appearance of the village with its legitimate ratio of the colored race, would have offered no inducement to a prolonged stay. The desire, however, for mail communication from the North caused me to remain for a time, and meanwhile devote my attention to a careful study of the vegetation of the Keys and accessible shores of the mainland.

In the streets of the town and along the railroad occurred in great abundance *Sida althoifolia*, var. *aristata*, DC., and *stipulata*, Cav., and *Abutilon Avicennæ*, Gærtn., with red flowers. Also *Euphorbia heterophylla*, L., *Cassia occidentalis*, L. and *obtusifolia*, L., the last two so often seen subsequently in the side streets and alley-ways of old towns and villages. An aged citizen of Tampa informed me that many years ago these species of Cassia were introduced there as coffee plants but soon found their way among the other weeds in the waste grounds.

The botany of the larger Keys was interesting because of the variety of the vegetation appearing in small circumscribed areas, and frequently each Key yielding species not observed upon the others. Lacking proper boat facilities, the only means of access to these coast islands, I depended upon the bateau for the near Keys and chance opportunities to reach the distant ones. To the North Key, one of the largest, most distant and interesting I was taken through the kindness of Capt. McIlvaine who was in search of floating timber; and during his day's work around the island, left me to the study of its vegetation which engaged my time both pleasantly and profitably. Among the more interesting finds here were *Maytenus phyllanthoides*, Benth., *Sapindus marginatus*, Willd., *Prunus Caroliniana*, Ait., *Forestiera porulosa?* Poir., *Passiflora suberosa*, L., *Psychotria undata*, Jacq., *Plumbago scandens*, L., *Ricinus humilis*, L., *Sarcostemma crassifolium*, Decaisne, *Rhynchospora megalocarpa*, Gray, and *Stenotaphrum Americanum*, Schrank. To the citizens each Key is known by a specific name while the word Cedar distinguishes the group. This generic term led me to form a mental picture of islands covered with Cedar, but quite contrary to my expectation, the Cedar Wood,

Juniperus Virginiana, L., var. *Bermudiana*, Vasey, is actually scarce; perhaps a score of small straggling dwarfs comprise the entire living representatives of a past pencil-wood forest. Although the location of the Faber Pencil-mills, their wood is obtained chiefly, I was informed, from the banks of the Suwanee, a river twenty miles distant.

The town of Cedar Keys is divided equally between two adjacent Keys, the one sustained by its pencil and lumber mills, the other by its stores, hotels and transit depot. On Way Key, containing the business portion of the town, occurred such plants as *Erythrina herbacea*, L., ornamental with its handsome foliage and bright scarlet flowers, but an ungainly looking shrub in its naked attire of spiny twigs; the yellow flowered *Mentzelia Floridana*, Nutt., and the white blossomed *Bidens leucantha*, Willd., together luxuriating upon the dry shell mounds; the spiny shrubs of *Bumelia parvifolia*, DC., and *Lycium Carolinianum*, Michx., with the creeping *Iresine vermicularis*, Moquin, marking the limit of the tidal wave; while *Scymeria pectinata*, Pursh., *Ipomœa sinuata*, Ost., and *Euphorbia pilulifera*, L., were scarce and limited in their range; *Eustachys petræa*, Desv., with sometimes many spikes; *Cynodon Dactylon*, Pers., forming dense mats in the loose white sand; *Melica mutica*, Walt, appearing in the shaded nooks on the mounds; *Zamia integrifolia*, Willd., the Florida starch plant, with its red, novel cone-like aments just emerging from amidst its spreading fern-like leaves; *Carex leucorum*, Willd., var. *Floridanum*, with lenticlar achenia; *Rhynchosia minima*, DC., of green and variegated foliage; *Sageretia Michauxii*, Brongn., and *Opuntia Ficus-Indicus*, Haw.

Agreeable to the desire of a New York friend I engaged with him a small sloop for a few hours pleasure ride with the privilege of landing on Snake Key, an island several miles distant and so named because of the supposed abundance of snakes on it. Upon arrival we joined in crossing, with the direction to meet the boatman on the opposite side. We had just entered and the bright yellow flowers of *Helianthus præcox*, Gray & Eng., arrested my attention when my friend, a few paces in advance, leaped, yelled, and cried simultaneously "snake bitten." At first I felt concerned but soon comprehended the situation; he had strayed among a nest of Spanish Bayonets, *Yucca aloifolia*, L., most formidable growths with which to come in contact; and they appear too so plentifully along this coast. After culling specimens of *Physalis Pennsylvanica*, L., and *Phyllanthus Niruri*, L., the latter a low perennial of straggling frutescent appearance, we again entered our boat and continued sail.

Gainsville is located upon an elevated rolling country, extending south to Bronson where it abruptly terminates in a low flat pine country, continuing to the Gulf of Mexico, interspersed here and there with dense impenetrable jungles of vegetation, defining the low fertile hummock lands. It was on these high and dry sand-ridges that the empetraceous shrub *Ceratiola ericoides*, Michx., occurred so abundantly and seemed novel in its evergreen spheroidal forms, and the beautiful *Zamia* dotted the ground of the open upland pine forests with its green tufts of Cycas leaves, and later in the season the green leaves and white flowers of the *Cabomba Caroliniana*, Gray, closely covered and hid to view the stagnant ponds around.

Near the Gulf the railroad passes for a distance of four miles through this dense vegetable growth of the Great Gulf Hummock, represented to be twenty miles long and half that width and penetrated by three large rivers conveying their waters to the Gulf. The promising appearance led me to extend my researches to these jungles. Notwithstanding a large portion of the time being consumed in reaching and returning daily from these somewhat distant grounds, I succeeded in two visits in enlarging my collection with specimens of such plants as *Chrysobalanus oblongifolius*, Mx., *Galactia Elliotti*, Nutt., *Sclerolepis verticillata*, Cavs., *Boltonia diffusa*, Ell., *Senecio lobatus*, Pers., *Vaccinium tenellum*, Ait., *Samolus ebracteatus*, Kunth., *Sabbatia gracilis*, Pursh., *Asclepias perennis*, Walt., *Ulmus alata*, Mx., *Sagittaria graminea*, Mx., *Spiranthes graminea*, Lindl., var. *Walteri*, Gray, *Calopogon multiflorus*, Lindl., *Smilax auriculata*, Walt., *Dich-*

romena leucocephala, Mx., *Rhynchospora, macrostachya*, Torr., *Carex gigantea*, Rudge *Cherokeensis*, Schk, and *verrucosa*, Ell., *Paspalum undulatum*, Poir., *Panicum? molle* Mx., and *gymnocarpum*, Ell., *Cratægus apiifolia*, Mx., and *Aspidium cristatum*, Swartz, var., *Floridanum*, with others previously detected.

Other plants seen growing sparingly upon the Keys were *Canavalia obtusifolia*, DC., *Rhizophora Mangle*, L., and *Laguncularia racemosa*, Gaertn., these with a few others mentioned find here perhaps their northern limit.

The arrangements completed, the present flora about exhausted, I was quite willing to depart southward in a small schooner beyond the distant highlands of Tampa to enter upon the study of a new field of nature's richest floral displays.—DR. A. P. GARBER.

NOTES ON THE HISTORY OF HELIANTHUS TUBEROSUS, THE SO-CALLED JERUSALEM ARTICHOKE; *by J. Hammond Trumbull and Asa Gray*, American Journal of Science and Arts, May, 1877.—We make the following extract: "Linnæus, in the Species Plantarum, gave to *Helianthus tuberosus* the 'habitat in Brasilia.' In his earlier *Hortus Cliffortianus* the habitat assigned was 'Canada.' M. Alphonse DeCandolle, in his *Geographie Botanique*, II., 824, (1855), refers to this as 'decidedly an error, at least as to Canada properly so-called," assigns good reasons for the opinion that it did not come from Brazil, nor from Peru (to which the name under which it appeared in cultivation in the Farnese garden seemed to refer), but in all probability from Mexico or the United States. He adds that Humboldt did not meet with it in any of the Spanish colonies.

About this time I received from my friend and correspondent, the late Dr. Short, of Kentucky, some long and narrow tubers of *Helianthus doronicoides*, Lam., with the statement that he and some of his neighbors found them good food for hogs, and, if I rightly remember, had planted them for that purpose. They were planted here in the Botanic Garden; after two or three years it was found that some of the tubers produced were thicker and shorter; some of these were cooked along with Jerusalem Artichokes, and found to resemble them in flavor, although coarser. Consequently, in the second edition of my *Manual of the Botany of the Northern United States* (1856), it is stated that *H. doronicoides* is most probably the original of *H. tuberosus*. This opinion was strengthened year after year by the behavior of the tubers, and by the close similarity of the herbage and flowers of the two plants, as they grew side by side; indeed, as the two patches were allowed to run together in a waste or neglected place, they have become in a measure confounded. Wishing to obtain an unmixed stock, I applied last autumn to Prof. J. M. Coulter, of Hanover, Indiana, and received from him a good number of tubers from wild plants of the neighborhood, which will now be grown. Some of these were slender, some thicker and shorter, and a few were to all appearance identical with Jerusalem artichokes. If they were really all from one stock, as there is reason to believe, the question of the origin of *Helianthus tuberosus* is well nigh settled.

ADDITIONS TO THE FLORA OF IOWA.—Since my last report, I find the following rare plants, to be added to Arthur's Catalogue of Iowa Plants, discovered in mounting my collection:

Euphorbia obtusata, Parsh., Prof. F. L. Harvey, 1875, Des Moines river banks near Humboldt.

Habenaria obtusata, Lindl., Mrs. J. McNeil, 1875, abundant in Harrison Co., Iowa, groves.

Desmodium paniculatum, DC., Groves, Ames, 1876.

Hypericum nudiflorum, Michx. Brink of Cedar River, five miles above Cedar Rapids, June 26, 1876.

Cymopterus glomeratus, Prof. F. L. Harvey, 1875, Humboldt, Ia. A rare plant here.

Setaria Italica, Kunth., College Farm, Ames, 1876.

Setaria verticillata, Beauv. College farm, large as millet!

Panicum depauperatum, Muhl. Woodbine to Ames.

Lolium perenne, L., Ames, dooryards, to Denison.

Poa alsodes, Gray, Woodbine 1875, Humboldt, Prof. F. L. Harvey, 1875.

Eragrostis Purshii, Schred. Woodbine, 1875.

Festuca elatior L. Near Ames, 1876.

VARIATIONS.—The normal *Erythronium albidum* from Illinois to W. Iowa, noted for spotted, broad leaves and very recurved petals, confined to groves; while a much smaller form from W. Iowa to Kansas, confined to the *prairies*, has narrow leaves, *never* spotted, petals *never recurved*, not half the height of the former. The difference is doubtless due to soil and locality.

As far as known to me, I was the first to discover this form; while the value and beauty of the *two* forms must be seen as they grow, (not in *hortis siccis*,) to be appreciated.

A still more noted variation is the *two* forms of *Cypripedium candidum*, the larger belonging exclusively to the Missouri "slope," W. Iowa, and at an invariable elevation of 100 feet above Boyer Valley (where it abounds,) on the steep, *loose* soil of the Sandy bluffs, no doubt to retain its original elevations here, and to the very verge of the "Divide," when we enter a new kingdom as to soil, air and flora! I never saw the smaller form till coming here, nor does it occur within 60 miles of the larger, the latter beginning at Woodbine, Harrison county, the former (as you advance eastward) at Carroll, Carroll county. The larger form seems more properly allied to *C. spectabile* than to *C. candidum*, and the two look like giant and pigmy side by side in a Herbarium.

Still much the same is true of the size of leaves in the eastern and western Iowa forms of *Lobelia spicata*.

Apropos of the surprising crop of *Valeriana sylvatica* appearing one year and all gone the next. In 1869 I saw a slough six rods or more long by 25 feet wide *covered all over in one mass of white bloom, like snow*, with our common *Ranunculus aquatilis*, while not *one* plant has appeared since, and I had to wait for seven years and go 212 miles to find a specimen, in Cedar River, 1876. R. BURGESS, *Ames, Iowa*.

SOME HARDY DENTARIAS.—About the middle of this month, as I was botanizing in the woods I found many small patches of *Dentaria laciniata* in bloom. It was early in the morning, and almost everything was covered with hoar frost. This was the case with Dentaria. In most all of the patches, however, there were one or two plants not touched by the frost. While many were black and cracked between the fingers, a few retained their freshness, notwithstanding they were sometimes entirely surrounded by the others. Darwin in his "Variation of Animals and Plants," mentions this fact in regard to peas growing in his garden, and thinks that there is a difference in the constitution of individual plants, so that some are better able to withstand the frost than others. As the Dentarias referred to were all equally exposed and growing close together, the fact of some being frosted while others were not, cannot be explained by saying there was a difference in soil or exposure. Darwin's explanation is a good one and no doubt correct. The fact is certainly a curious one.—JOSEPH F. JAMES, *Cincinnati, Ohio*.

SOME KANSAS PLANTS.—On page 10, Vol. 1, No. 3. of the BOT. BULLETIN, G. C. Broadhead says of *Œnothera speciosa:* "It generally prefers a rich limestone soil of but a few inches thickness, resting on limestone." I have found just the reverse to be the case here, as it is quite common on the river bottoms where the soil is rich and deep, but I have never found it on the limestone bluffs where the soil is such as Mr. Broadhead describes; while *Œnothera Missouriensis* is abundant in such situations and avoids the bottom lands.

I found *Clematis ochroleuca*, Ait., in bloom April 28th, on the highlands between the Solomon and Republican rivers, Cloud county. I see Gray's Manual says it is rare,

and found near Brooklyn, N. Y., Pennsylvania and Virginia. I thought perhaps it might interest your readers to hear of it so far west as this Will some of your readers tell me how to preserve herbarium specimens of Cacti?—MATTHEW H. PANTON, *Junction City, Kansas.*

RECENT PUBLICATIONS.—*American Journal of Science and Arts*, April. The Dictionnaire de Botanique, by M. H. Baillon, Paris, is in a fair way to become a bulky work. The third fascicle is now out and about 300 pages will be devoted to the first letter of the Alphabet. The Cretaceous deposits of Spitzbergen have yielded *Taxodium, Sequoia, Cyperus, Carex, Alisma*, seven Poplars, two Alders, three Hazels, a Hornbeam, a Beech, four Oaks, an Elm, a Plane-tree, an Ivy, five species of *Cornus*, two of *Nyssa*, two of *Magnolia*, a *Tilia*, three Maples, three Hawthorns, and a veritable fossil strawbery! It seems that the American Mistletoe is making great ravages among the elm and black walnut trees in the latitude of Louisville, Ky. "As soon as a bunch of mistletoe fixes itself upon a branch, the outward extremity ceases to grow, and finally dies. The tree soon presents a clubby appearance, followed by death." The mistletoe grows in great abundance about Hanover, Indiana (forty miles from Louisville), but we have never appreciated that it was such a dangerous customer. It grows on the elm, walnut, honey-locust and various other trees, but we have yet to notice the first deadening effects. We are glad to have our attention called to it and will watch it more closely.

American Naturalist, April.—We quote: "Fournier gives as the result of his study of the grasses of Mexico the following statement: 'Among grasses with separated sexes, the female flowers differ very little, if at all, as regards the situation or form of the floral envelopes, when the sexes are borne on different plants; but when the plant is monœcious the glumes of the two sexes are widely different. These differences are most marked in certain genera of Chlorideæ, normally diœcious and accidentally monœcious.' The grass described by Engelmann under the name *Buchloe dactyloides* is a curious example in point. Beside this is now placed *Opizia stolonifera*, of which Presl had seen only the female plant. Although the female flowers of these plants differ very widely, their male plants resemble each other so much that they have been put in the same genus. *Caziostega humilis* is the male form of *Buchloe*, and *C. anomala* is the male form of *Opizia*." From the Flora of Colorado we quote the following sentence in regard to *Buchloe* as being of interest in this connection: "Nuttall, who had only the male plant, referred it to the genus *Sesleria*, and described it as *S. dactyloides* (*Gen.* 1. *p.* 64.) Steudel founded another genus on the female plant, *Antephora axilliflora*, (*Glum.* 1. *p.* 111). The true relationship between them was first detected by Dr. Engelmann, and clearly set forth by him in his masterly article in the *Trans. St. Louis Acad.*"

The Gardener's Monthly, April.—An article on "Self-Fertilization and Cross-Fertilization of Flowers," is begun by Mr. Meehan in this number.

Bulletin of the Torrey Botanical Club, March and April.—Francis Wolle adds one hundred species to the Fresh Water Algæ of our country, and C. F. Austin describes several new species of Mosses.

Field and Forest, April.—Mr. Martindale gives an interesting little note in regard to the Scandinavian herbarium which he purchased at the Centennial. He says that it contains about 1500 species and is probably one of the most complete representations of the flora of Sweden to be found in this country. He mentions two or three points of interest in comparison with our own flora. Sweden has 30 species of *Hieracium*, but only one *Aster* and one *Solidago!*

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